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TREATMENT OF DRUG USERS, ABUSERS AND OVERDOSERS

by

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TREATMENT OF DRUG USERS, ABUSERS AND OVERDOSERS

In the field of treatment and rehabilitation of drug abusers in Pennsylvania, little help is available to the individual voluntarily seeking treatment or to the judge who wants to provide treatment for the offender. Community general hospitals have varied policies and commitments for providing emergency care for the abuser in the hard and soft drug field. Only 100 beds are available for detoxification of narcotic addicts in many different types of institutions. Community Mental Health-Mental Retardation Centers are providing specialized but fragmented services for drug abusers in approximately 14 base service units. As of October 1, 1971, 13 methadone maintenance programs have been started throughout the State with most of them having caseloads which tax their staff and long waiting lists. Only one residential therapeutic community, Gaudenzia House in Philadelphia, and one specialized hospital, Eagleville Hospital and Rehabilitation Center, exist. The Diagnostic and Rehabilitation Center in Philadelphia is treating drug abusers solely on an ambulatory basis. Innumerable physicians have been prescribing methadone on prescription blanks in their private offices thus precipitating abuse in this area. Vocational rehabilitation services direly needed in the rehabilitation process are not available to the fullest extent. In order to begin providing the necessary treatment and rehabilitation services to Pennsylvania's drug abusers, the law must be understood and physicians must become skilled in the treatment of use, abuse and overdose of all drugs and their combinations.

I. Treatment for Narcotic Addicts

A. Legal Aspects

Routine Prescribing of Narcotics in Pennsylvania

Narcotic prescriptions are issued to provide legal possession of narcotics for legitimate medical reasons only. Sections 6 and 7 of Act 693, known as the Pennsylvania Drug, Device and Cosmetic Act indicates that:

> Physicians may provide narcotics to any patient except a narcotic addict for the relief of acute pain or related conditions. This may be done by use of prescriptions or in emergencies by phone to the pharmacist provided a written prescription is sent in 72 hours. Narcotics can be administered from the physician's supply provided he obtained the material on an official order form.

In addition the new Federal Regulations under the controlled Substance Act of 1970 must be adhered to.

Accurate records must be kept including the name and address of the patient, the drug and dose prescribed or given.

An inventory of all Schedule II Drugs should have been taken May 1, 1971.

B. Medical Aspects

1. *The Physician's Responsibilities in Treating Drug Dependent Persons with Medical Disease*

   Narcotics may be provided for patients suffering from disease requiring extended use of narcotics whether or not they become addicted.

Every licensed practitioner shall report immediately to the Department of Health on his own stationery or on Form HDC-7819 those patients whose diagnosis indicates the need to prescribe narcotics over an extended period of time or in unusually large doses. It is particularly applicable in a terminal or incurable disease such as cancer. These reports are held confidential as a privileged communication. They are instituted to protect the practitioner, the patient, and the pharmacy filling the prescription. The Health Department should be notified when the patient dies or no longer uses narcotics.

If these patients are hospitalized in the course of their illness, the hospital or institution must report these cases to the Pennsylvania Department of Health.

2. *Basic Principles in the Treatment of the Narcotic Addict*

Since 1917 the treatment and rehabilitation of narcotic drug addicts is represented by a long list of failures. Relapse rates were high and further involvement in spreading the disease occurred through the failure of treatment programs and the harshness of our laws.

Is narcotic addiction an incurable disease or have we, the treatment personnel, failed to produce the right program? We are all aware that there exists one glowing error—the failure to provide a coordinated program with adequate follow up particularly in a residential facility. The one area where we have failed to recognize a preventive treatment potential is interrupting the adolescents' use of drugs at an early phase before they become addicted to way-of-life as well as addicted to drugs.

Age has a great deal to do with treatment approaches because the user falls into a specific pattern by age category representing length of drug usage. Three groups are identified.

a) Those up to 18 years of age.
b) Those 18-25 years of age.
c) Those 25 years of age and over.

This latter group has contributed most of the available epidemiologic data on the American addict. His reasons for drug use and focus on self-destruction makes treatment a different problem than the problem of the adolescent drug user. Many of these addicts are sociopathic as well as psychotic who play the con game to perfection. Although methadone maintenance will control the disease in many of these individuals, it will succeed only in reinforcing his contempt for the authoritative program in the vast majority. Therefore, the therapeutic community concept seems most applicable at this point for this group.

The 18-25 year olds are skirting on the fringes of the law but have not become criminally oriented. Their drug habit has not increased to the point where stealing and robbing is a necessity to maintain their habit. They suffer from a poor self-image and have found the normal process of maturing too slow and unproductive with discipline retarding progress. Detoxification with supportive confrontation sessions should offer much to this group.

Those under 18 years of age present still another problem area. They are experimenting usually within peer group structure simply for "the fun of it". Their failure in communication with family and the older generation has presented them with the dilemma of constructive versus destructive alternatives in the transition from childhood to adolescence. Without question detoxification integrated with group dynamics is the approach of choice for this group.

3. *The Physician's Responsibilities in Treating Narcotic Drug Addicts*

Providing addicts with narcotics to satisfy their addiction or as ambulatory detoxification is not within the framework of legitimate medical practice in Pennsylvania. Section 8 of the Pennsylvania Drug, Device and Cosmetic Act reads: "The Narcotic Provisions Act shall not be construed to apply to the treatment of habitual users of narcotic drugs under the supervision of a duly licensed practitioner authorized by law to prescribe such drugs in hospitals, sanatoriums, poorhouses, prisons or public institutions except such institutions shall render an annual report to the State Department of Health giving the names, addresses, ages, clinical conditions and results of treatment of all habitual users of drugs given treatment in said institutions."

The use of narcotics in the treatment of narcotic addiction is permitted in the following situations:

a. To relieve acute withdrawal symptoms provided narcotics are administered in secure institutional in-patient facilities. (Ambulatory treatment using a narcotic is not permitted in the private doctor's office, the emergency room or hospital clinic).

b. In authorized, approved methadone maintenance programs. Act 186, Methadone Rules and Regulations, promulgated December 19, 1970. Authorized methadone maintenance programs are considered research programs by the Internal Revenue Service, the Federal Bureau of Narcotics and Dangerous Drugs of the U.S. Department of Justice, the Food and Drug Administration of the U.S. Department of Health, Education and Welfare and the Pennsylvania Department of Health. Such programs may be conducted as approved *clinics* and methadone may not be prescribed by the private physician in his office or in the out-patient department in the hospital. The procedure to obtain permission to operate a methadone maintenance clinic is to secure an IND number from FDA, approval from the Secretary of Health.

C. Specific Treatment Programs for Narcotic Addicts

Treatment programs should encompass every known approach since no one program will satisfy the needs of every addict. Such treatment includes:

Detoxification in a hospital.
Halfway houses — residential facilities.
Adequate treatment in correctional institutions, prisons and jails.
Therapeutic communities — residential.
Chemical treatment.
Religious programs.

1. *Methadone Detoxification to Become Permanently Drug Free.*

   Under Act 693, narcotic addicts may be treated in institutions, hospitals, jails or poorhouses. It is advised that all detoxification take place as an in-patient. To date no successfully controlled outpatient detoxification has been reported and thoroughly evaluated. All addicts should have the opportunity to become drug free, especially the adolescent under 18 years of age and those with short involvement, less than two years. Methadone maintenance here is the easy way out and its use should be generally discouraged. Most authorities in the addiction field feel that separate facilities for the young group is essential. Their needs are different, their problems are different and staff must be trained to deal effectively with the adolescent. An acceptable in-patient detoxification schedule can take place over a seven-day period following which admission to a residential facility is mandatory for any type of success story.

Detoxification Schedule (In-patient) Using Methadone

The dose of methadone depends somewhat on the size of the habit but the majority will do well on the following schedule:

1st Day	— 10mg.	every 8 hours		NOT TO EXCEED
2nd Day	— 10mg.	— 10mg.	— 10mg.	40-60 MG. PER DAY
3rd Day	— 10mg.	— 5mg.	— 10mg.	
4th Day	— 10mg.	— 5mg.	— 5mg.	
5th Day	— 5mg.	— 5mg.		
6th Day	— 5mg.			
7th Day	— 0			

2. *Methadone Maintenance — In an Approved Clinic*

   Methadone is usually started in an ambulatory setting in an approved clinic meeting all the Federal and State Regulations of a Research Drug. Methadone cannot be prescribed by a private physician in his office. The patient probably is still using heroin: he is counselled to stop and use nothing but methadone given to him in liquid form daily which he takes under observation. The initial dose is usually 40 mg. per dose per day. The amount is increased by 10 mg. every five to ten days until in four weeks a maintenance dose of 90-110 mg. is reached. Experience has shown that there is little need to juggle the dose in relation to his symptoms which were all present prior to entering this program.

The use of sedatives and tranquilizers should be discouraged. Their use encourages the addict to be dependent on still another drug. Chloral hydrate for sleeplessness is the one medication to be considered favorably.

3. *Other Chemical Antagonists*

   a. Cyclazocine
   This is a long-acting antagonist which reduces subjective and physiological effects of any morphine-like drug. Its regular use can reduce or prevent the development of physical dependency on morphine-like drugs. More research is needed in this promising new field.

   b. Naloxone
   Naloxone is another narcotic antagonist which is free of side effects but is short acting and relatively ineffective orally. If this material can be made available in silastic pellets for implantation under the skin an effective new tool may be available in this approach.

4. *Emergency Treatment of a Narcotic Overdose*

Symptoms

Three key symptoms suggest narcotic overdose:

a. Depression of the cerebral cortex and respiration. Patient may breathe only several times per minute or have Cheyne-Stokes rhythm.

b. Constriction of the pupil.

c. Some degree of coma: pulse slow, systatic blood pressure lowered, postural hypotension.

In acute poisoning within one-half hour of the dose there may be flushing of the face, neck and upper torso, dizziness and scratching. In very acute poisoning there may be dilatation of the pupils, cyanosis, several drops in blood pressure, rapid heart beat, drop in respirations and accumulation of chest fluids.

Systemic Treatment

Establish air way.
Prone position, feet elevated.
No external heat or any treatment to increase peripheral vasodilatation.
Light external manual stimulation.
Try to keep patient awake but don't walk him.
Artificial respiration if indicated.
Oxygen administration.
10-20 mg. benzedrine subcutaneously — useful to combat vasodilatation and depression.
Nalline as outlined below.
If an opiate has been taken by mouth, gastric lavage should be done using 1:5000 potassium permanganate. 50 c.c. of a 50% magnesium sulfate should be left in the stomach.

Treatment is usually successful if the patient is not comatose. If in coma but not in shock, prognosis doubtful. If in shock with dilated pupils, few respirations per minute and pulmonary edema, prognosis is poor.

Folklore addict self-treatment all contraindicated which includes:

Walking
Salt injected into vein
Milk by mouth
Ice water immersion baths

Nalline will antagonize respiratory depression caused by:

Codeine
Demerol (meperidine)
Dihydrocodeine
Dilaudid (dihydromorphinone)
Heroin
Leritine (anileridine)
Methadone
Metopon (methyldihydromorphinone)
Morphine
Nisentil (alphaprodine)
Pantopon

Action

Nalline's mode of action is unknown but it appears to act on the central nervous system in such a way as to abolish certain effects of some of the opiates. Its duration of action is two and one-half to three hours.

The lethal dose is unknown. Patients have tolerated 75 mg. without fatality. Given to heroin addicts, withdrawal symptoms are produced.

Action in Narcotized Individuals

Nalline reverses severe respiratory depression due to unusual sensitivity to narcotics. The action is almost immediate. The respiratory rate may be increased two or three times within a minute. Nalline's ability to lighten the depth of coma is variable and usually slight. It is also capable of gradually increasing blood pressure in the hypotensive case.

Nalline is capable of reversing neurologic changes associated with narcotic poisoning, such as loss of superficial and deep reflexes, absence of corneal and gag reflexes, and miosis.

Contraindication to Use of Nalline

a. NALLINE IS RECOMMENDED ONLY IN SIGNIFICANT RESPIRATORY DEPRESSION. IF USED IN PATIENTS WITH ONLY MILD DEPRESSION, IT MAY INCREASE THE DEPRESSION RATHER THAN REVERSE IT.

b. IN PATIENTS USING BOTH NARCOTICS AND NON-NARCOTICS SUCH AS BARBITURATES AND HAVE DEVELOPED RESPIRATORY DEPRESSION, NALLINE SHOULD NOT BE USED. NALOXONE IS THE DRUG OF CHOICE IN SUCH CASES. IT MAY INCREASE THE RESPIRATORY DEPRESSION CAUSED BY THE NON-NARCOTIC.

c. DO NOT USE WITH MEPERDINE.

Treatment of Narcotic Addiction Overdose

a. TWO MG. SHOULD BE INJECTED SUBCUTANEOUSLY. IF NO RESPONSE, REPEAT TWICE AT TEN MINUTE INTERVALS. TO MAINTAIN RESPIRATION IT MAY BE NECESSARY TO ADMINISTER NALLINE EVERY TWO TO THREE HOURS AS NEEDED. PROLONGED USE MAY PRODUCE RESPIRATORY DEPRESSION ITSELF.

b. OXYGEN OR ARTIFICIAL RESPIRATION WHERE INDICATED.

II. Treatment for Non-Narcotic Drug Abusers

Treatment for specific drug overdose can be found in the Addendum. Generally speaking the treatment for various drugs misused are as follows:

A. *The Barbiturate and Tranquilizer Abusers*

Many patients suddenly are aware that after long use they can no longer do without their sleeping pills, sedatives or tranquilizers. If the physician refuses to renew the prescription, they promptly seek out other medical assistance. It is important that physicians begin to take a good "drug history" on each patient. Some of these individuals develop a paradoxical reaction and find that barbiturates actually given them an exhilerating effect. There are also individuals who become introduced to sedatives through the use and/or treatment of amphetamine misuse. The majority of dependent users take these drugs for the sedative effect to shut out their problems so they can be comfortable.

All these persons only seek help when in trouble — overdose, loss of job, loss of supply, family harassment or inability to stay in school. Detoxification needs to be done in a hospital under close observation since it can be life threatening. Gradual reduction should be at a rate of approximately 0.1 gram per day. It requires 14-21 days to safely withdraw an individual from barbiturates. Following the detoxification and psychotherapy is similar to that used in narcotic addiction. Throughout therapy suicide prevention procedures must be implemented.

B. *Amphetamine Abusers*

Again, one of the groups misusing this drug is the obese private patient who also finds a dependency has developed. Most of the younger abusers do so for excitement and to escape the need of functioning within conventional inter-personal and social activities. There are two phases of treatment. The first must be hospitalization for the phase. The prescribing of sedatives along with decreasing doses of amphetamines is nearly always indicated if peace is to be maintained in the institution. Suicidal attempts from depression and guilt must be guarded against. Supportive counselling begins while an in-patient. A transfer to group therapy is made after discharge. The physician and therapist must be constantly aware that they are dealing with a behavior pattern which is aggressive, violent, destructive, impulsive with paranoid tendencies. They can be the most dangerous drug abusers to treat.

C. *Hallucinogenic Abusers*

The principal drugs in this category are LSD, a semi-synthetic derivative of ergonovine; STP; Mescaline; DMT and Hashish, which is a mild hallucinogen.

The results of a good trip are seldom made known to the medical profession. It is only when a "bummer" or a bad "flash back" occurs that help is sought. These are of two varieties — the psychotoxic characterized by confusion and/or acute paranoia and supremacy. The second variety is one of panic.

If the patient's behavior indicates no harm to self or others, treatment is best accomplished outside the hospital in a pleasant setting with professionals or non-professionals who will "talk down" the patient for the length of time indicated. Because of the uncertainty as to what drug was actually ingested, Vallium is probably the drug of choice if medication is indicated. The duration of the initial treatment is 12-72 hours, the follow-up therapy must focus on the psychological dependency produced by the abuse. Sympathetic counselling continues to be the best supportive measure.

III. Treatment for Non-Narcotic Users (Not Yet Abusing)

These facilities are usually located in storefronts, in areas where the problem is full blown. They offer an opportunity to discuss and search for new values with a peer group who supposedly understands the problem. These programs are to be discouraged unless professional help and training is available on an ongoing basis. Input, interpretation and guidance at this point is critical if a youngster is to discover and incorporate new values into his living instead of continuing to re-enforce his reasons and needs for being involved in the drug scene. Group sessions and individual counselling for the youth and their parents is an essential part of such an approach. Every city and town should have one or more *involvement centers* and parent awareness groups as part of their prevention program. These can be sponsored by the mental health centers, voluntary agencies, churches, service clubs, community and civic groups.

DRUG ABUSE

Diagnosis and Emergency Treatment

Drug abuse is found everywhere today; it occurs increasingly in affluent suburbs as well as in slums. It has become a commonplace in schools, colleges and industry, particularly among young people. The public is looking to physicians and other health personnel for help with this medical—social problem. The physician is often the first contact for treatment of a drug abuser in an emergency situation.

This booklet is designed as a guide to assist physicians and others engaged in emergency care to better diagnose and give initial treatment to patients with acute drug intoxications and the acute complications of drug dependence. No attempt has been made to include long-term care or rehabilitation, nor has alcohol, the most widely misused drug of all, been dealt with because the problems associated with it have been widely discussed elsewhere.

There is disagreement regarding some of the statements in this guide but the information given here represents the consensus of a panel of recognized experts. Furthermore, it is becoming increasingly evident that with *the use of many mixtures, high dosages, frequent adulterations* and *trials with bizarre substances* there is often a great uncertainty in the diagnosis and treatment of acute drug intoxications.

In all cases in which drug abuse is suspected the taking of a careful history is important even though emergency situations may require intervention on the basis of less than ideal information. Every possible detail should be obtained from the patient, peers, parents or other persons regarding the circumstances of the abuse. There are rather characteristic behavioral changes in drug abusers which may have been noticed by others and may be brought out if the appropriate questions are asked:

1. Change in usual pattern of person's life?
2. Change in attendance, discipline, work performance?
3. Decline in physical appearance and dress?
4. Shift in use of language?
5. Signs of an opposite personality emerging; that is, a hostile or withdrawn person becomes friendly; a friendly person becomes depressed or hostile?
6. Rejection of old friends and secrecy about new ones?
7. Stealing?
8. Use of sun glasses to hide pupils and long-sleeve shirts to hide needle marks?

Laboratory tests should be utilized by the attending physician when appropriate but not for the purpose of incriminating the patient.

Finally, a word about the physician's attitude toward these patients:

1. Don't panic.
2. Don't threaten, be tolerant.
3. Keep the environment "cool" and quiet. Use a gentle manner.
4. Treat each case as an individual, using your best judgment. If the drug is unknown, treat symptomatically.
5. *Remember that in this area more harm can usually be done by over rather than under-treatment. In most cases little more than acceptance and reassurance is necessary.*

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Desk Reference on Drug Abuse.

Central Nervous System Depressants

These drugs produce general, progressive depression of the central nervous system, characterized by sedation and sleep, sometimes preceded by a period of apparent excitement and disinhibition. In overdose they cause coma and death by respiratory failure. The effects of all drugs in this class are mutually additive, including those of alcohol.

Physical and psychological dependence may develop on prolonged or repeated use; the withdrawal syndrome is characteristically different from and more serious than that produced by narcotic analgesics. There is cross-tolerance and cross-dependence among all drugs in this class.

These drugs are usually taken by mouth but occasionally are injected or inhaled.

BARBITURATES

DRUGS ABUSED MORE COMMONLY

- Amobarbital (Amytal)
- Combined Amobarbital & Secobarbital (Tuinal)
- Pentobarbital (Nembutal)
- Secobarbital (Seconal)

DRUGS ABUSED LESS COMMONLY

- Barbital (Veronal)
- Butabarbital (Butisol)
- Hexobarbital (Evipal)
- Phenobarbital (Luminal)
- Thiopental (Pentothal)

DIAGNOSIS

Behavioral
- Drowsiness
- Drunken behavior
- Confusion
- Irritability
- Inattentiveness

Physical
- Weak pulse, rapid or slow
- Hypotension
- Reduction of reflexes
- Ataxia
- Slurred speech
- Lowered temperature
- Respirations rapid & shallow or slow (Cheyne–Stokes)
- Possible convulsions on rapid withdrawal
- Cyanosis
- Constriction of pupils unless anoxic
- Reduction of urine output

Laboratory – Blood levels of value in prognosis, 10 cc. unclotted blood required. 2 oz. urine for thin layer chromatography

TREATMENT

Severely ill patients, not responding to physical stimuli and with signs of respiratory failure:

General – Change position frequently
- Removal of airway obstruction
- Oxygen
- Mechanical assistance for respiration may be needed
- Warmth
- I.V. fluids, electrolytes

Specific – Consider hemodialysis

For shock: Levarterenol Bitartrate (Levophed) 4cc. of 0.2% Sol. to 1,000 cc. Dextrose; 2–3 cc. I.V. per minute as indicated by consideration of fluid volume and central venous pressure.

CNS stimuli are not considered indicated by many experts. If the decision is made to use such treatment great care must be exercised.

Methylphenidate (Ritalin) 1–10% Sol., 30–50 mg., I.V., or I.M., q30min., as required.

Pentylene Tetrazole (Metrazole) test dose, 5 cc. of 10% Sol., I.V. Intensive treatment, 10–20 cc., I.V. and I.M., simultaneously, may repeat as indicated with smaller doses.

Conscious patient responding to physical stimuli

General – Warmth
- Keep moving
- Hospitalization advisable
- Close observation of vital signs mandatory

Specific — Gastric lavage using a large bore tube, save contents for laboratory
or
Induce vomiting with Syrup of Ipecac if consciousness not impaired
Slow withdrawal often best in chronic users
If there is marked anxiety, nausea and tremor, the patient may be a chronic user in incipient convulsive state. Give Sodium Pentobarbital (Nembutal–) 200–400 mg. (3–6 grains), orally, q4–6h, as indicated, gradually reducing the dose.

GLUTETHIMIDE (Doriden)

The effects of this drug closely resemble those of the barbiturates. It may, however, cause severe and unexpected hypotension.

DIAGNOSIS — See barbiturates. Hypotension may be prominent.
Laboratory — Drug can be identified in 10 cc. unclotted blood or 2 ozs. urine.
Treatment — Generally the same as with acute barbiturate intoxications. Hypotension may require volume expanders.

CHLORAL HYDRATE (Somnos, Noctec)

DIAGNOSIS — Signs and symptoms resemble those of acute barbiturate intoxication. They may be accompanied by marked gastric irritation and vomiting.
Treatment — Same as acute barbiturate intoxication.

OTHER SEDATIVES & MINOR TRANQUILIZERS

Meprobamate (Miltown or Equanil), Chlordiazepoxide (Librium), Diazepam (Valium), Methyprylon (Noludar), Ethinamate (Valmid), Ethchlorvynol (Placidyl).

DIAGNOSIS — The signs and symptoms closely resemble those of acute barbiturate intoxication, but severe hypotension may develop at any time during the clinical course sometimes without correlation with the severity of the behavioral symptoms.
Laboratory — Blood levels may be determined but their significance is uncertain.
TREATMENT — *Symptomatic and supportive as for barbiturate intoxications.* Frequent recording of vital signs is mandatory because of possibility of unexpected hypotension.

VOLATILE HYDROCARBONS

Glue, gasoline, benzine, carbon tetrachloride, nail polish remover, aerosols, lighter fluid, paint, lacquer and varnish thinner.

DIAGNOSIS (Patient may be DOA with plastic bag over head.)
Behavioral
Hazy euphoria
Slurred speech
Impaired preception, coordination & judgement
Initial excitation may be followed by depression and stupor
Hallucinations in 50% of cases
Psychotic burst occasionally

Physical
Odor
Irritation of mucous membranes
Rapid pulse
Damage of brain, liver, kidneys, bone marrow and myocardium (possible ventricular tachycardia or fibrillation)
Freon propellant in aerosols may cause freezing in nasopharynx
Anoxia by replacing pulmonary air
Laboratory — relevant to determine tissue damage (SGOT).

TREATMENT
General — Generally the same as with acute barbiturate intoxications. Severe hypotension should be treated with volume expanders, such as blood, plasma expanders and isotonic saline.
Specific — If swallowed, gastric lavage but no emetics. If inhaled, fresh air. or 95% O_2 and 5% CO_2. Avoid injection of Epinephrine because of possibility of myocardial sensitization.

BELLADONNA ALKALOIDS

(Belladonna, Scopolamine, Hyoscyamine, Stramonium, Atropine, Homatropine) — These drugs, particularly scopolamine, produce central nervous system depression which is often preceded by a period of apparent stimulation and delirium. The effects of large doses are very long lasting.

DIAGNOSIS

Behavioral

- Weakness
- Giddiness
- Thirst
- Blurred vision
- Great excitement & confusion
- Delirium
- Stupor
- Coma

Physical

- Dry mouth and throat
- Dilated pupils
- Twitchings
- Difficult swallowing
- Light sensitivity
- Elevation of temperature & blood pressure
- Pulse, first slow then rapid & weak
- Respiratory depression
- Cyanosis
- Urinary retention

TREATMENT

General — Supportive as indicated

- Alcohol sponging
- Watch for urinary retention
- Give sips of water

Specific — Gastric lavage with 4% Tannic acid solution or tap water

- Pilocarpine, orally 5 mg. (1/10 grain) or 1—2 mg. (1/60—1/30 grain) subcutaneously q2h, p.r.n., repeat as indicated
- Small doses of short acting barbiturates for escitement, Pentobarbital, 0.2—0.5 gm. (3—7½ grains), I.V. or I.M., repeat once or twice in 1 to 5 minutes, as indicated
- Oxygen
- Mechanical assistance for respiration may be needed

Central Nervous System Stimulants

These drugs produce excitatory effects in the central nervous system, characterized by increased wakefulness and alertness and feelings of increased initiative and ability and depression of appetite. Excessive dosage, particularly when administered intravenously (speed), produces a delirious or psychotic state. The period of excitement or stimulation is followed by an after—depression, this tends to set off self-perpetuating use of these drugs in binges. Tolerance develops rapidly, sometimes it is accompanied by psychological dependence. The occurrence of physical dependence with a clear-cut abstinence syndrome is highly questionable.

Signs and symptoms of peripheral sympathetic nervous stimulation complicate the picture of the intoxication.

The drugs are generally ingested but also sniffed (cocaine) or injected intravenously (amphetamines - speed).

AMPHETAMINES

Amphetamine (Benzedrine),
Dextroamphetamine (Dexedrine),
Methamphetamine (Desoxyn, Methedrine),
Phenmetrazine (Preludin).

DIAGNOSIS

Behavioral

Wakeful
Alert
Talkative
Abnormally cheerful
Increased initiative
Increased motor activity
Irritability, restlessness
Aggressiveness, agitation
May have hallucinations and paranoid tendencies
Severe depression when the effects wear off; then suicidal tendencies may emerge

Physical

Tremour
Dry mouth
Bad breath
Tachycardia, hypertension (May be absent in chronic user)
Sweating
Needle marks (in speed freak)
Dilated pupils
Fever
Hyperreflexia
Arrhythmias (usually pre—ventricular contractions)
Palpitations
Convulsions
Coma in fatal poisoning
Circulatory collapse

Laboratory — may be able to be identified in blood sample.

TREATMENT

General — Gastric lavage with tap water
or
Induce vomiting in all cases of oral intake because of delayed emptying time.
Isolation, quiet environment.
Guard against suicidal tendencies during recovery period which usually takes three to six days but may last for several weeks.

Specific — Sedation with barbiturate, especially for the patient taking combined stimulants and depressants; Pentobarbital (Nembutal), I.V. or I.M., 0.2—0.5 gm. (3—7½ grains), repeat in 1—5 min. if indicated; Amobarbital (Amytal), I.M. or I.V., 0.3—0.6 gm. (5—10 grains), repeat 1—5 min. as indicated.
Chlorpromazine (Thorazine) 25—50 mg. (3/8—3/4 grain), I.M. or I.V., slowly, repeat as indicated, should be used only if it is certain that no contaminants are involved.
Diazepam (Valium) — I.M. or orally, 20—50 mg. (1/3—3/4 grain), stat., followed by 5—10 mg. (1/12—1/6 grain), q2h as indicated.
Hypothermia when indicated, cold compresses, submersion in cool water, 78—85 degrees F.
If intracranial pressure evident, use hypertonic urea, 0.5—1.5 gm/Kg. I.V. in a period of 10—30 minutes, or Mannitol

(Osmitrol), 20% Sol., I.V., 1.0–3.0 gm/Kg. in a period of 10–30 minutes. Ammonium Chloride may increase urinary excretion.

COCAINE

DIAGNOSIS

Behavioral

Garrulousness
Shudders
Brief euphoria
Feeling of mental & physical superiority
May have depression or hallucinations
Aggressiveness may signal oncoming violence
Paranoid psychosis

Physical

Perforated nasal septum in sniffer
Muscle twitching
Hyperactive reflexes
Rapid pulse
Irregular respirations
Numbness of hands and feet
Failure of sight and hearing
Cyanosis
Convulsions
Coma
Respiratory paralysis

Laboratory – Blood and urine levels may be of assistance.

TREATMENT

General – Often need little but supportive care
Warmth
Oxygen
Mechanical assistance for respiration

Specific – Gastric lavage with tap water
or
Induce vomiting
Sedation – Pentobarbital (Nembutal), 0.2–0.5 gm. (3–7½ grains), I.V. or I.M., repeated as indicated.
Other sedatives used for amphetamine intoxication may be considered.
If convulsive, I.V. Dilantin solution (50 mg./cc.) 1 cc. per minute up to 3–5 cc.

Narcotic Analgesics

These drugs relieve pain, induce sedation or sleep and elevate mood, particularly when it is depressed. They also suppress cough and are constipating. A high degree of tolerance and severe physical and psychological dependence usually develop with prolonged or repeated use. The withdrawal syndrome is severe and uncomfortable. Overdosage causes death by respiratory depression. Most of the symptoms can be ascribed to abnormal functions of the autonomic nervous system.

The drugs have been taken by mouth, sniffed, injected subcutaneously or intravenously and smoked (opium).

Nalorphine (Nalline) and Levallorphan (Lorfan) are synthetic narcotic antagonists which themselves can cause drug dependence.

Examples of widely abused narcotic analgesics are: Opium, Morphine, Heroin, Laudanum, Paregoric, Codeine, Meperidine (Demerol), Methadone (Dolophine).

DIAGNOSIS

Behavioral

- Euphoria
- Drowsiness
- Nodding
- Loss of appetite & sexual drive
- Altered personality and activity
- Lack of attentiveness
- Constipation

Physical

- Pin point pupils (less in seasoned addicts and with some opioids)
- Itchy nose and skin
- Needle tracks of extremities, groin, abdomen which may resemble pock marks in addicts using subcutaneous route
- Nausea and vomiting
- Slow pulse and respiration
- Respiratory failure

Laboratory — If intake of these drugs was within 8–10 hours they can be readily detected in blood (10 cc., unclotted) and urine (2 ozs.); with better techniques, up to 24 hours and longer.

TREATMENT

General — Hospitalization indicated

- Gradual withdrawal is usual in addicts
- Keep patient aroused
- Change position frequently
- Watch airway
- Give O_2 and CO_2 5%

Specific — For gradual withdrawal may substitute Elixir of Methadone (Dolophine), 5–30 mg. (1/12–1/2 grain), 2xday.

For overdoses, give Nalorphine Hcl. (Nalline), 5–10 mg. (1/12–1/6 grain), or Levallorphan Tartrate (Lorphan), 1 mg. (1/60 grain), I.V., 1–3 times at 15 minute intervals as indicated.

Sedation with Pentobarbital (Nembutal), 100–200 mg. (1½–3 grains), orally, at night may be indicated.

For ingested drugs, gastric lavage with Potassium Permanganate, 1–5,000; leave in the stomach 15–30 gm. (½–1 ounce) of Sodium Sulfate in water for catharsis.

NEWBORN INFANT OF MOTHER ADDICTED TO NARCOTICS

Withdrawal reaction is typical, intensity depends on mother's dose and interval before birth. Significant mortality is present if untreated.

DIAGNOSIS — Hyperactivity, irritability, shrill constant cry, tremors, flushing, sweating, lacrimation, emesis, diarrhea, dehydration, sneezing, yawning, poor intake of food, excess mucous secretion, signs of respiratory distress (rarely apnea), fever, convulsions.

DIFFERENTIAL DIAGNOSIS — Hypoglycemic tetany, intracranial hemorrhage, sepsis, tetanus.

TREATMENT

Paregoric controls all symptoms; 5 drops orally, q3–4h, may need 10–20 drops, q3–4h, in severe cases.

Phenobarbital (Luminal); useful if oral paregoric vomited; 4 mg. (1/15 grain), subcutaneously, q4–6h, may need up to 8–15 mg. (1/8–1/4 grain), q4–6h.

Chlorpromazine (Thorazine); use only if attempts with paregoric fail; 0.7 mg–1.2

mg/Kg, I.M., p.r.n.; later, oral doses.

Rarely and only as an emergency measure, Levallorphan (Lorphan), 0.05–0.1 mg., I.V. into umbilical cord.

(Supportive sedation is gradually withdrawn as tolerated over a period of 30–60 days or longer.)

PROPOXYPHENE HCL (Darvon)

May be taken as Darvon compound containing aspirin.

DIAGNOSIS

Behavioral and Physical signs and symptoms resemble heroin overdose with prominent signs of gastric irritation.

TREATMENT

Similar to that for heroin overdose. May need Nalorphine Hcl. (Nalline) or Levallorphan Tartrate (Lorphan).

Hallucinogens

These drugs produce a toxic delirium characterized by visual illusions and hallucinations sometimes accompanied by disturbances in proprioception, bizarre paresthesias and synesthesias, perceptual distortions, etc. Auditory hallucinations are less common. There may also be difficulties in concentration and flight of ideas. Changes in affect may range from hilarity to depression or panic states. The central nervous system effects may be complicated by peripheral autonomic effects. The duration and intensity of these effects vary a great deal from drug to drug and individual to individual. Tolerance occurs with some drugs, psychological dependence may occur occasionally but there are no clear—cut signs of physical dependence.

LSD (D—Lysergic Acid Diethylamide) — Usually taken orally on sugar cube, paper, cookie, etc. Occasionally injected intravenously. Often used in a group setting.

DIAGNOSIS

Behavioral,

Duration, 8—12 hours, with possible recurrence of "trip" even after prolonged periods of abstinence

"Trip" is characterized by hallucinations, largely visual

Distortion of sensory perception

Exaggerated sense of comprehension — may "see" smells, "hear" colors

False sense of achievement, ability and strength

Loss of sense of reality

Suggestibility

Depersonalization, alteration of body image

Tends to intensify existing psychosis

May trigger suicidal tendencies

Panic & violence

Physical,

Pupils dilated

Incoordination

Moderate tachycardia

Mild hypertension

Eyes may become inflamed

Laboratory — no laboratory tests available

TREATMENT

General — Often need only emotional support, "talking down".

Specific — Thorazine and Amytal contraindicated unless identification of LSD is made with certainty for fatality may occur if the offending drug is STP (see below) or if adulterants are Strychnine, Belladonna or Phencyclidine Hcl, (Sernyl, an animal tranquilizer).

Diazepam (Valium), 20—50 mg., Stat., I.M. or orally, 5—10 mg. (1/12—1/6 grain), q2h, p.r.n.

OTHER HALLUCINOGENS

The other hallucinogens listed below differ from LSD in potency and duration of action but not in regard to the quality of their effects on the central nervous system. The diagnosis and treatment of intoxications are therefore virtually identical to LSD.

Mushrooms (Psilocybin) — Duration, 5—8 hours, swallowed

Peyote (Mescaline, synthetic compound found in peyote) — Duration, 8—12 hours, swallowed, occasionally injected.

DMT (Dimethyltriptamine) — Duration, 1—3 hours, smoked or injected.

DET (Diethyltriptamine) — Duration, 2—3 hours, smoked or injected.

DOM (Dimethyoxy Methylamphetamine) "STP" synthetic related to Mescaline and Amphetamine — Duration, 2—4 days, swallowed.

Morning Glory Seeds (Rivea Corimbosa) — Only 1/10th as strong as LSD. Duration, variable. Seeds chewed or made into a tea.

DIAGNOSIS — Same as LSD.

TREATMENT — Same as LSD.

Cannabis

These drugs are derived from the hemp plant cannabis sativa. They are smoked (Marijuana), occasionally ingested (THC and Hashish), or sniffed (THC). THC may be smoked as drops in regular cigarettes. In high doses they produce clearly hallucinogenic effects but the effects of low doses are variable and may resemble certain disinhibitory effects of alcohol. The latter effects are conducive to social usage.

TETRAHYDROCANNABINOL (THC) is the constituent which carries most, if not all, of the pharmacological potency of the plant materials.

HASHISH is derived from the flowering top of the female plant. It usually contains a substantial percentage of THC and is therefore quite potent.

MARIJUANA consists of chopped plant material. Depending on origin, method of preparation and age, it may differ a great deal in its content of THC and, therefore, in its potency.

DIAGNOSIS

Behavioral

Duration variable, 2 to 4 hours for marijuana

Intensification of mood

Increased appetite, especially for sweets

Tendency to laugh & giggle

Euphoria with sense of increased ability

Altered sense of space & time

Lessening of inhibitions

Transient loss of recent memory

May appear intoxicated (uncommon)

Staring

Physical

Odor of burnt leaves or hemp on breath and clothes with marijuana

Inflammation of eyes

Possible dilation of the pupils

Possible increased pulse

Possible elevation of blood pressure

Laboratory — no tests available

TREATMENT

General — Principal therapy is rest, reassurance, sympathy and "talking down".

Specific — Drug treatment rarely indicated but if very over-excited can give Diazepam (Valium), orally, 10 mg. (1/6 grain), q2h as indicated.

DIAGNOSTIC CLUES

Signs and symptoms are variable depending on purity, combinations used and individual reaction. The terms designated reflect the usual reaction to one type of drug. Exceptions are frequent but not included in the list. CODE: X - Acute Phase; W - Withdrawal Phase.

Signs & Symptoms	Central Nervous System Depressants	Central Nervous System Stimulants	Narcotic Analgesics	Hallucinogens
Aggressive Behavior	X	X		X
Anorexia		X		
Areflexia	X			
Ataxia	X	X	X	X
Circulatory Collapse		X		
Coma (Overdose)	X		X	
Confusion	X	X		
Cramps	W	W	W	
Depression	X	W		
Disorientation	X	X		X
Drowsiness	X		X	X (Occ. Marijuana)
Drunken Behavior	X			X (Occ. Marijuana)
Euphoria	X (Solvents)	X	X	X
Fever	W	X		
Gooseflesh	W		W	
Hallucinations	X	X		X
Hyperreflexia, Convulsions	W	X		
Hypotension	X, W		X Heroin Overdose	
Inattentiveness	X		X	
Increased Appetite				X
Irritability	X	X		
Lacrimation	X (Solvents)		W	X
Needle Tracks	X	X	X	
Nystagmus	X			
Paranoia, Panic Reaction	W	X		X
Parkinsonism	X (Tranquilizers)			
Psychotic Symptoms	W	X		X
Pupils - Pinpoint			X	
Dilated	X (Scopolamine) (Doriden)	X	W	X
Normal	X			
Reaction to Pain Reduced	X	X	X	X
Respiratory Depression	X	X (Cocaine)	X	
Restlessness	W	X	W	X
Runny Nose	X (Solvents)		W	
Skin Rash	X (Bromides)	X		
Slurred Speech	X		X	
Tachycardia		X	W	X

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